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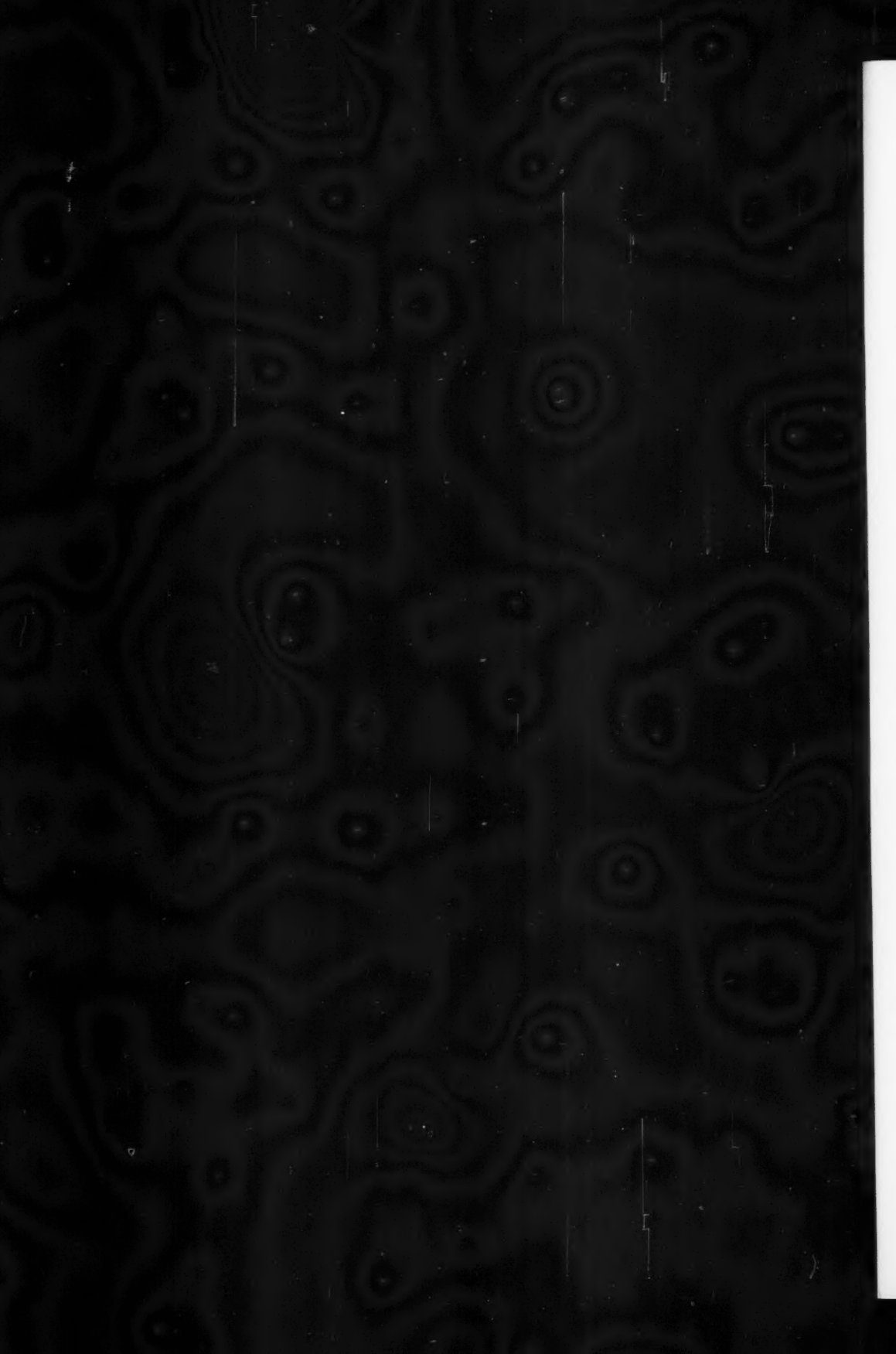
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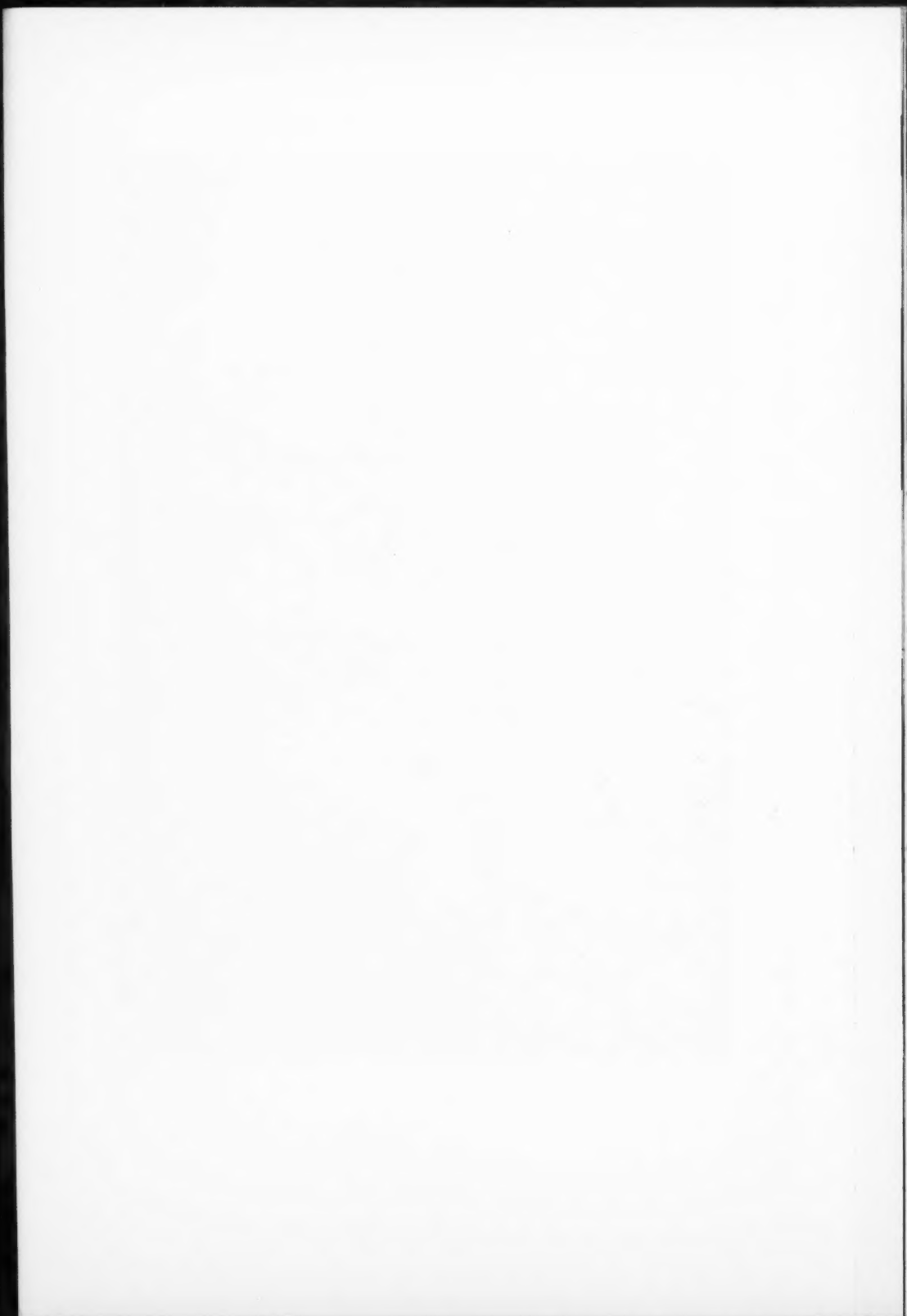
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Robert L. Taylor

Narcissus biflorus

[See page 191]

Aristocrats of Geraniums

DORCAS BRIGHAM

The colored-leaved geraniums have seemed very fitting companions for the scented-leaved varieties and both seem particularly appropriate in old-fashioned gardens. Interest in these two types is still active and deservedly so as scent and color go hand in hand in making a garden.

At the start, it is wise to purchase small plants of the colored-leaved varieties unless you can induce a friend to give you cuttings in the fall. By the first of September the humidity of summer days begins to lift and three to four inch cuttings will root fairly easily, especially if the cut ends are dipped in Hormodin powder before planting them in clean sharp sand. These should be potted in 2¼-inch pots as soon as about one-half inch roots appear, using three parts loam, one part leaf mold and some sand if the loam is heavy. A four inch pot of bone meal to a bushel of mixed soil will give the needed food until the plants are shifted to larger pots.

The colored-leaved geraniums make good house plants if one has a sunny south window. They do not make heavy growth during the winter but after "the turn of the year" become active again, coloring well, flowering profusely and building sturdy plants.

Pot on into 3½-inch pots as soon as the roots fill the small pots, but not before. To help growth, once each month, a teaspoonful of Vigoro or other well-balanced fertilizer may be stirred into the topsoil followed by a good watering.

When winter days are dark, avoid over-watering, but do not let furnace heat dry out the soil excessively. Be sure that water is slightly warmed in

winter. Stir the soil occasionally to keep it from caking and molding.

A final potting may be made in the late spring, singly into six inch pots or two together in ten inch pots, for use on the summer terrace or planted in tubs or iron kettles in combination with Peppermint, Beauty, *capitatum*, Prostrata Oak, Skelton's Unique or apple geraniums, the latter kinds trailing gracefully over the rims of the containers.

Mrs. Parker, Mme. Languth, Happy Thought, Lady Pollock, Miss Burdette Coutts or Mrs. Cox are particularly showy used by themselves or in combination with the scented ones. The bicolors or tricolors were highly prized in the early 1800's. Unfortunately many kinds were lost to us when their popularity waned. Now they have come into their own again as modern herb gardeners search for colorful companion plants for rosemary, lavender and lemon verbenas.

A window box with colored-leaved and ivy-types is attractive and many effective combinations may be made such as Mrs. Parker, Jubilee and Hills of Snow with the ivies, Bridesmaid, Snowdrift and Butterflies. The flowers of these latter are varying shades of pink and white. If red flowers are preferred, then Red Marshall MacMahon, Distinction and Mountains of Snow may be combined with the ivies, Etincelanet, Mrs. Banks and Caesar Frank.

Colored-leaved geraniums will do best in summer if planted or placed in pots where they get some light shade during the intense heat of the day. This is especially true of the golden-leaved varieties Cloth of Gold, Damon's Gold, Dwarf Gold Leaf, Crystal Palace

In preparing the photographs to accompany Miss Brigham's article, it was planned that the emphasis should be thrown on the shape of the leaves, their habit and arrangement, their color patterns and leaf margins. For that reason, the pictures were taken looking down on the tops of the plants, just as one does in nature, unless he puts his potted geraniums high on terrace wall or post. There is not intended any suggestion of botanical relationship or phylogenetic symbolism, sinister or otherwise. All are natural size. All photographs made by Robert L. Taylor.

The first page is given over chiefly to the greens in which yellow predominates. In the upper left we have Dwarf Gold Leaf, a not too vigorous plant with deeply lobed leaves, a little thin in texture but of a delightful pale yellow-green, the same hue one finds when sunlight streams across a good lawn; to the right of it, an old sort, Happy Thought, a reasonably vigorous plant, with normal green margins and a central zone of white with the inevitable small patches of gray-green on the edges where the white pierces the green; below on the left, Cloth of Gold, a vigorous yellow-green, a little deeper in hue than Dwarf Gold Leaf and with the shallow marginal lobes of the zonale ancestor; to its right, Crystal Palace Gem, in which the yellow-green of the leaf is broken by an irregular central patch of darker green, almost the reverse of the pattern in Happy Thought.

Page 152. The second page celebrates a group that shows the bronze zone so typical of the zonale types, but with smaller leaves, and a zone that appears to be more brilliant since it lies over a somewhat yellow-green ground and not the normal green. The growth is more compact in every case and the leaves seem more crowded on the stems. The color shows very slightly on the young leaves; becomes more intense as the leaf develops and then fades somewhat as the leaf ages. The names are, in the usual order, Bismark, Bronze Beauty, Roderick Dhu and Jubilee. Although there is no good reason for it, the colors in these leaves remind one of the wood-colored pansies that used to be common in good mixtures.

Page 153. This page holds a mixture: The upper left is the common form of Mmc. Salleroi, i.e. the dwarf suffruticose form, like an apple geranium in growth, as compared to the free growing form, that did not like its care here; the colors are the usual geranium green, with irregular patches of gray-green as the green reaches the white margins. This is the plant or one of the bedders that received the full invective of the William Robinson-Gertrude Jekyll school of thought. Sometimes it doubtless deserved; sometimes it was as all right as any of their plantings. The two pictures on the right hand margin of the page are the Red and Pink MacMahon geraniums, that are little more than clearly marked zonale. In the lower left is an interloper, Black Vesuvius, the only pygmy that decided it would live with us, close growth, a faint zone and brilliant scarlet flowers.

Page 154. This is the first of three pages that shows essentially the green-white variegations. In the usual order we have Mme. Languth, Attraction and Silver Ruby, all with varying degrees of white margins, a few flakes of gray-green as this comes to meet the central green area; the last, No. 137, is like them, except that it has a zone of brown and when the white area crosses a brown zone, one gets flakes of dull rose and pink, making the sort a tricolor—not a bicolor.

Page 155. Three bicolours and a final tricolor are shown. Close examination will reveal that the lobing on the margins is different; the meeting of the white margin with the green centers is characteristic in each and in the case of the third variety, the Silver S. A. Nutt one has a few leaves that are definitely segmented with pure white. Such leaves recurred all summer. The first two varieties are Mountains of Snow, and Flowers of Spring; the lower right hand corner shows Mrs. Cox, a vigorous plant with smooth zonale margin and a tendency to whiteness on the lobes at the junction with the petiole.

The last group, Page 156, shows only tricolors: Skies of Italy, Lady Pollock (single), Miss Burdette Coutts and Lady Cullum. Each is lovely in its own characteristic way, with variations in the width of the light margin that may be either white or cream, the style of the marginal lobing, the strength of the bronze zone which in turn governs the amount of bronzy pink and rose that will show through.

In no case are the flowers poor; but in no variety are they equal to a good zonale variety.













Gem and Bronze Beauty. All varieties prefer brisk cool days to the high humidity of this past season, which often causes leaf spotting and rotting. These troubles can be checked by dipping the affected plant in a solution made by stirring one teaspoon of Fer-mate into a quart of water.

If mealy bugs should show a preference for your plants, they may be washed off by spraying with a fine but forceful spray of water. If you have only a few plants roll a bit of cotton on a toothpick, dip in alcohol and touch the body of the insect with this swab.

As fall comes on again and plants

tend to stretch their stems, cuttings may be made before frost from this year's vigorous growth, and if there is room the old plants, cut back to shapely form, can be brought into the house. Much bloom and color will form on the old plants which can be enjoyed through the winter while the new plants will provide for the garden the coming season. If space is at a premium, the old plants can be discarded and only the new ones kept.

There is enough variety in leaf patterns and color to keep one's interest and enthusiasm for this group of plants alive for many happy gardening years.

Two of the Rarer Tulips

ALFRED BATE

Tulipa urumiensis Stapf

New to the garden in 1947 came one bulb of the *Tulipa urumiensis*; one bulb because it cost over a dollar and as Hall in *The Genus Tulipa* had not given it a good reputation as to health, I had hesitated getting even one bulb. During the winter further research was made in the hope I could find some encouragement in my venture.

Gray does not even mention it in his LILIACEAE and the only reference Hall gives is the *Botanical Magazine* of 1932. Here Stapf, who named it, gives a description and notes with a very lovely plate (t. 9288) which made me impatient for spring. He states that John Hoog of the famous Van Tubergen bulb firm sent him (Stapf) bulbs in 1928 which flowered at Kew in the second half of April 1929. Hoog had received the bulbs from "Salmas on the northern shore of Lake Urumiya" (you will find this lake in modern atlases spelled Urumia) and Stapf's spe-

cific name refers to it.

In mid-April of 1948 my one bulb flowered; a most delightful little treasure three inches in height and with two blossoms to the stem. Neither Stapf nor Hall makes reference to more than one flower. The blossoms both in bud and when open are erect, they do not wait for full sunshine but open widely on any fairly clear day to display a glorious golden yellow star with anthers of the same bright color. The exteriors of the three outer sepals are heavily shaded with olive bronze except for a bright yellow margin. As this bronze is composed of green and purple and sometimes one color stands alone for a tiny streak, the bud is more attractive than most of the smaller tulips. The exteriors of the three inner sepals are bright yellow with three green median lines. The foliage is a dull green faintly pigmented with red on the lower edges of the leaves.

Lured by its beauty more than by

the faint hope of its hardiness, six more were ordered for the autumn of 1948; three to go next to the original bulb and three to venture into a garden in central Vermont belonging to a friend who had become afflicted with the tulipmania and was willing to take a chance. To close off the Vermont story, they all went through the winter splendidly and flowered gloriously in late April.

The three new bulbs were up and one showing a bud before the year old bulb put in an appearance—but when it did come up it had an increase which was strong enough to give a solitary blossom. One of the new bulbs had three flowers on the stem and all the blossoms do not open at once. This year the height of several increased to four inches. The flower when open is slightly over two inches in diameter. The pure aureolin yellow is charming near the deep blue of *Muscari armeniacum*.

It may be rash to claim hardiness for this jolly little tulip with only two seasons' experience to combat Hall's statement that it "proves to be difficult to maintain in cultivation." But we must remember that an English winter is mild and damp and such that the bulbs get no rest and are stirred into an early growth; whereas in its habitat the winters are cold and the ground is frozen just as ours are and that Persian summers are as hot as ours. One should also remember that the English advise lifting the bulbs of species tulips and storing them in dry warm places during the summer and whatever can be said for that in England should never be done here where the summer's baking in the soil is just what the species are used to. Finally to back up my claim for hardiness word has recently reached me that Professor F. L.

Skinner grows this tulip in his Canadian garden at Dropmore, Manitoba, which should certainly speak for its hardiness.

Tulipa aucheriana Baker

Tulipa aucheriana is another of these very delightful, desirable midgets of the tulip group—not quite so expensive as *T. urumiensis* but still in the costly bracket. Like the former it has no synonyms to worry the gardener having been described by Baker in 1883 from bulbs collected by Aucher Eloy near Teheran and named in his honor. Coming from Persia it too should take kindly to American gardens; even in England, Hall gives it a good bill of health. It too flowers in April and was charming this spring as it blossomed on a small terrace just above the yellow fellow mentioned above. The newly opened flowers nestle close on a rosette of grayish-green leaves but as the days go by they gradually are lifted to a total height of three inches and one can easily see that there are two blossoms on the stem—Hall says there may be three. The flowers open to a flat star slightly more pointed than in *T. urumiensis* and of about the same size; they are of the most entrancing shade of what used to be called ashes-of-roses and have a small pale yellow center and bright yellow anthers. The outer sepals have on their exteriors a fairly wide stripe of greenish-yellow on a duller pink ground, the exteriors of the inner sepals have two central lines of brown-pink on a background of the same shade as of the interiors. Hall says the garden effect is brown-pink; I would say the brown tinge was not noticeable enough to mention except when the group had both half open and

fully open flowers. It is a most delightful color.

With reasonable care I can see no reason why most tulip species should not be as permanent features in the spring gardens as *Crocus* species, snowdrops or primroses. I am referring to gardens north of the Carolinas and where there is a more or less hard winter and a hot and often dry summer which are the climatic conditions of their native homes. Planted in full sun and where there is sharp drainage I do not think they care whether the soil is clayey or sandy, so long as it has a lime content and they are planted deep. For the smaller ones six inches down to the top of the bulb are not too much; for the taller ones eight or even ten inches are not excessive. In heavy soils they might be set an inch shallower; but remember this: mice, and I am almost certain squirrels too, are fond of them and deep planting is a protection from these pests as well as from a too active hoe. If they can be planted where no artificial watering need be done so much the better. Then leave them undisturbed until the clumps are so crowded that the flowers are massed too closely to show their

shape. Then lift and dry off in a cool dry place and remove the accumulated tunics and replant in late September.

In years when no lifting is to be done remove the dried dead stems, never pull them up until they come easily, and stir the soil thoroughly and deeply enough to fill in the channels which the stems have made so ants and slugs cannot have an easy access down to the bulbs. At this time it would be well to stir in bone meal in about the proportion of a handful to the square yard. The closing of the channels which the dead stems have left is vitally important. Even with the tall garden tulips many losses are due to slugs crawling down these channels to the bulb and eating it. I was skeptical about slugs being fond of tulips until a friend showed me a bulb which she had accidentally dug while she and I were working in the garden; this bulb had a fat slug in it and the pest had already devoured almost half of it. While ants may not eat the bulb they certainly are prone to make nests under it and then when the roots begin growth they will be suspended in numerous air chambers which may not be fatal at once but will eventually.

The New R.H.S. Classification of Daffodils

Because the Revised System for the Classification of Daffodils, as adopted by the Royal Horticultural Society, which came into force January 1, 1950, is still somewhat unfamiliar, or not always accessible, the Editor presents the modern classification anew for the benefit of our daffodil friends. This is taken from the authoritative "Classified List of Daffodil Names," issued in October 1950 by the R. H. S.

In the following: (1) "colored"

means yellow or some color other than white; (2) "white" means white or whitish; the length of a perianth segment is the extreme length measured on the inside from its junction with the corona along the midrib to the extreme tip, and the length of the corona is the extreme length measured from its junction with the perianth to the end of its furthest extension when the edge is flattened out.

DIVISION I

TRUMPET NARCISSI

Of Garden Origin

Distinguishing characters: One flower to a stem; trumpet or corona as long or longer than the perianth segments.

(a) Perianth colored; corona colored, not paler than the perianth.

(b) Perianth white; corona colored.

(c) Perianth white; corona white, not paler than the perianth.

(d) Any color combination not falling into (a), (b) or (c).

DIVISION II

LARGE-CUPPED NARCISSI

Of Garden Origin

Distinguishing characters: One flower to a stem; cup or corona more than one-third, but less than equal to the length of the perianth segments.

(a) Perianth colored; corona colored, not paler than the perianth.

(b) Perianth white; corona colored.

(c) Perianth white; corona white, not paler than the perianth.

(d) Any color combination not falling into (a), (b) or (c).

DIVISION III

SMALL-CUPPED NARCISSI

Of Garden Origin

Distinguishing characters: One flower to a stem; cup or corona not more than one-third the length of the perianth segments.

(a) Perianth colored; corona colored, not paler than the perianth.

(b) Perianth white; corona colored.

(c) Perianth white; corona white, not paler than the perianth.

(d) Any color combination not falling into (a), (b) or (c).

DIVISION IV

DOUBLE NARCISSI

Of Garden Origin

Distinguishing character: Double flowers.

DIVISION V

TRIANDRUS NARCISSI

Of Garden Origin

Distinguishing characters: Characteristics of *Narcissus triandrus* clearly evident.

(a) Cup or corona not less than two-thirds the length of the perianth segments.

(b) Cup or corona less than two-thirds the length of the perianth segments.

DIVISION VI

CYCLAMINEUS NARCISSI

Of Garden Origin

Distinguishing characters: Characteristics of *Narcissus cyclamineus* clearly evident.

(a) Cup or corona not less than two-thirds the length of the perianth segments.

(b) Cup or corona less than two-thirds the lengths of the perianth segments.

DIVISION VII

JONQUILLA NARCISSI

Of Garden Origin

Distinguishing characters: Characteristics of any of the *Narcissus jonquilla* group clearly evident.

(a) Cup or corona not less than two-thirds the length of the perianth segments.

(b) Cup or corona less than two-thirds the length of the perianth segments.

DIVISION VIII TAZETTA NARCISSI

Of Garden Origin

Distinguishing characters: Characteristics of any of the *Narcissus tazetta* group clearly evident.

DIVISION IX POETICUS NARCISSI

Of Garden Origin

Distinguishing characters: Charac-

teristics of the *Narcissus poeticus* group without admixture of any other.

DIVISION X

SPECIES AND WILD FORMS AND HYBRIDS

All species and wild, or reputedly wild, forms and hybrids.

DIVISION XI

MISCELLANEOUS NARCISSI

All Narcissi not falling into any of the foregoing Divisions.

Three New Species of *Amelanchier*

BERNARD H. SLAVIN*

The *Amelanchier*, commonly known as the Shad Bush, is one of the native flowering shrubs of the northeastern States. In mid-spring its white flowers forecast the beginning of the flowering season with an accuracy that man, thus far, has seldom achieved.

During the sixty years in which I have been engaged in the development and use of hardy plant materials, I have always been attracted by the possibilities that this genus offered, particularly in the larger naturalistic type of ornamental planting.

More than forty years ago, after propagating and planting out the various recognized species, as well as individual forms which I considered promising, I discovered that the existing botanical and horticultural texts did not describe in any accurate manner the various materials which were to be found growing under native conditions in New York State. I also discovered in my many contacts with Drs. Charles S. Sargent and Alfred Rehder

that there was considerable confusion in this genus and that there was no precise opinion as to whether the various individuals and colonies of plants found in the wild represented individual species, sub-species, varieties, or merely geographical forms.

Forty years ago the opportunity to obtain, at least, a partial clarification of the materials making up this genus was an invigorating challenge. Because my interests were primarily in the field of ornamental horticulture, it is only fair to state that during the period of my work and observations, I have cast aside many plants which may have had taxonomic significance.

Beginning with materials collected mostly in western New York, I have, over a lifetime, selected many individuals and colonies of plants which, by their form and bloom, have shown outstanding characteristics. Over the years, the better of these individuals have been repropagated so that today, there are in Durand-Eastman Park at Rochester, New York, first and second generations of seedlings as well as the

*Superintendent of Parks, Retired, Rochester, New York.

original collected plants. From this work it has been possible to reach several conclusions: first, that there are distinctly superior flowering forms of the *Amelanchier*; second, that most if not all of the forms having horticultural merit breed true from seed; third, they have sufficient basic characteristics to fully warrant their acceptance as true species, rather than as varieties or clonal variants.

Out of this work, I propose three new species of *Amelanchier* on the grounds that they are superior for ornamental purposes and should so be recognized.

Amelanchier magnifica

Amelanchier magnifica is an upright stoloniferous shrub to four meters high, forming patches; young wood brown, buds 1 cm. long, plump, acute dark brown, inner bud scales scarlet.

Leaves oval to oval-oblong, dark green above, glaucescent beneath, usually subcordate; rarely rounded or cuneate at the base except for the small leaves on fertile shoots; 3-7 cm. long, often longer, and 3-5 cm. broad, acutish with cuspidate or mucronate tips, usually serrate nearly to the base, more coarsely serrate toward the apex with 3-5 teeth per centimeter, young unfolding leaves densely white-tomentose beneath, and villous on the margins and petioles; bracts also densely villous on the margins with large tufts of soft white hairs at the apex.

Racemes upright, 5-6 cm. long, rather stout, densely tomentose and villous; 5-10 flowered, petals broad, obovate, about one cm. long, flower bracts tinged scarlet, adding charm to the opening petals; fruit subglobose and rather large, up to 9 mm. across; top of ovary woolly; sepals on ripe fruit reflexed, lower pedicels 25 mm. long. Not rare in the vicinity of the

Lake Ontario shore north of Rochester, New York. This species has been established in Durand-Eastman Park.

Amelanchier leroyensis

Amelanchier leroyensis is named for the Township of Leroy, Genesee County, New York, where I discovered it in the wild state in 1916. This new species is a stoloniferous shrub with rather slender upright stems, growing in dense clumps to 6 mm. high, and spreading by under-ground stolons, thus forming patches. Young wood rather dark brown; two-year old wood, purple brown; older wood, dark brown with purple serpentine stripes; buds acute, dark brown, nearly black; terminal buds 8 mm. long, lateral buds 4-6 mm. long.

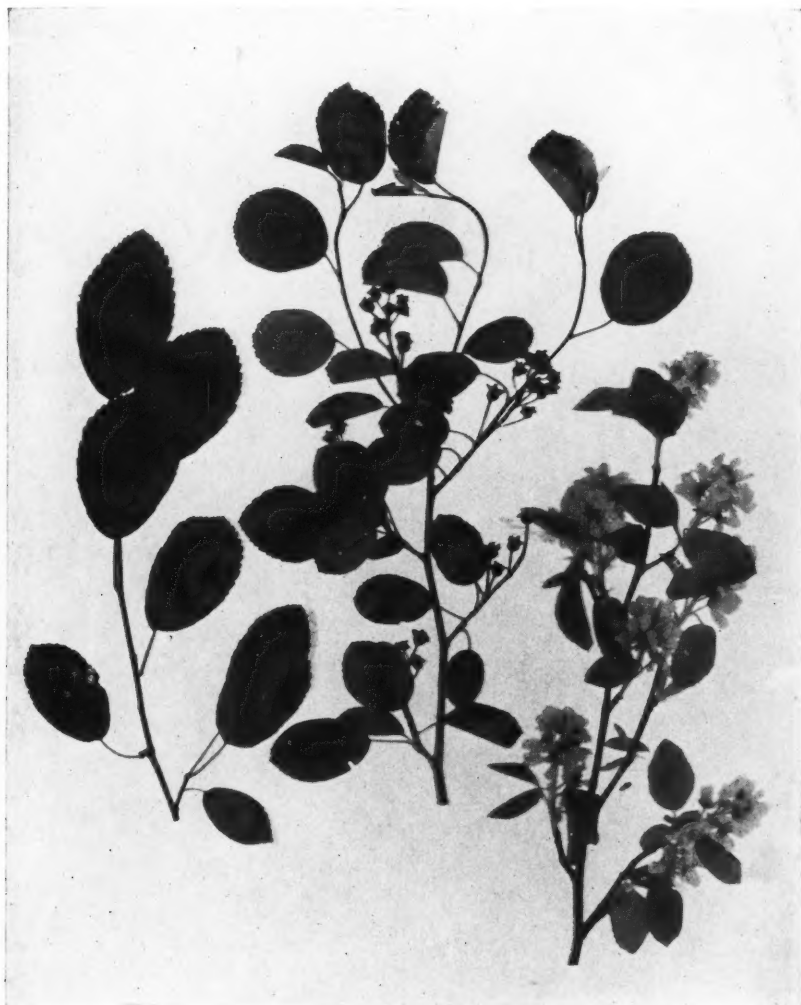
Leaves dull green above; lighter green beneath, oblong to oblong-oval, or oblong-obovate, sometimes orbicular-oval, mostly acute, though often cuneate or rounded, and occasionally subcordate at the base, 3-7 cm. long, irregularly serrate above the middle with 2-3 teeth per cm.; and often entire below the upper third; the young unfolding leaves are white tomentose, and villous on the under-surface, margins, petioles; and also on the young shoots.

Racemes upright, short and dense, 3-4 cm. long, tomentose and villous, 4-10 flowered, bracts villous, petals oblong-obovate, cuneate, 1 cm. long; fruit 9 mm. across, dark purple, bloomy, sweet; top of ovary woolly, sepals on ripe fruit recurved, lower pedicels 15 mm. long.

This new species has been established in Durand-Eastman Park.

Amelanchier acuminulata

Amelanchier acuminulata in the wild state is a shrub about 1 m. high, but in



Amelanchier leroyensis

cultivation it becomes a large arborescent shrub with many stems, ascending from a solitary crown to the height of 5 m. with branches loosely spreading; branchlets slender, young wood

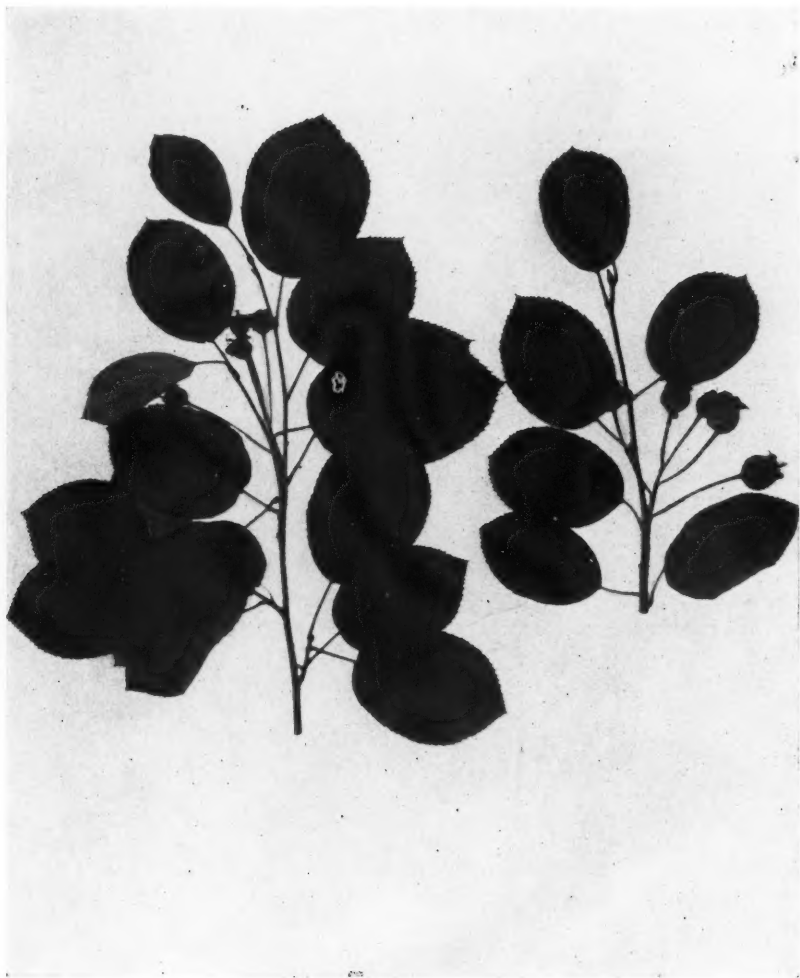
dull brown, winter buds slender, 1 cm. long, sharply acute, maroon, or reddish-brown, inner or unfolding bud scales lustrous reddish-brown up to 15 mm. long.



Amelanchier acuminata

Leaves oblong-oval to oblong-obovate, 3-6 cm. long, dark green above, glaucous beneath, finely serrate nearly to the base, acuminate at the

apex, rounded or cuneate to broad-cuneate, and occasionally truncate at the base, at maturity, slightly scoop shaped, and somewhat concave or hol-



Amelanchier acuminulata

lowed from above; young unfolding leaves purplish with scurfy-pubescent on the under-surface, and villous on the margins and petioles.

Racemes rather loosely spreading, 3-5 cm. long, 2-6 flowered with villous on the greenish flower bracts, young developing flower buds greenish acute,



Amelanchier magnifica

petals oblong-obovate, 1 cm. long, 3-4 mm. broad; developing fruit pyriform, ripe fruit subglobose, dark purple, bloomy, sweet, 8 mm. across, calyx on ripe fruit reflexed, top of ovary glab-

rous, lower pedicels on ripe fruit 25 mm. long, seldom longer.

I discovered this species in 1914 at Mendon Ponds in the township of Mendon, Monroe County, New York.

The Genus *Lycoris* in the Mid-Atlantic States

JOHN L. CREECH

In reviewing the several references to the genus *Lycoris* (AMARYLLIDACEAE) that have appeared during the past 100 years, one is somewhat confused in regard to identity, flowering, hardiness and culture of some of the species. It is hoped that the following notes will somewhat remedy this situation.

Lycoris is an eastern Asiatic genus of autumn-flowering bulbous plants related to such South African hothouse bulbs as *Amaryllis* and *Nerine*. This is an unfortunate alliance from the standpoint of garden culture, for it has caused most writers to be too cautious in defining the limits of hardiness for the various species of *Lycoris*.

All of the known species of *Lycoris* are plants of temperate China and Japan and have been cultivated in those countries for many centuries. In the mid-Atlantic States, centering around Washington, D. C., only one species has been grown outdoors to any extent and that one, *Lycoris squamigera* Maxim., has been in gardens even as far north as Massachusetts since before 1900. With such a hardiness record as this, it is surprising that the other species have not been given more attention as to how far north they also can be grown. This might be explained by the fact that *L. squamigera* was sent from the Orient* directly to Massachusetts. The other species which were probably obtained from England (where they were regarded as of limited hardiness) had their start in our southern gardens.

*By Dr. George Hall of Bristol, Rhode Island.

Here at Glenn Dale, Maryland, we are growing *L. squamigera*, *L. radiata* Herb. and *L. aurea* Herb. outdoors in temperatures that usually go down to zero degrees Fahrenheit at least once each winter. At this locality, the first two have been naturalized for over fifteen years while *L. aurea* has been outdoors only since 1946 but has flowered for the past two years. *Lycoris incarnata* Spreng. and *L. sanguinea* Maxim. also have been planted outside in years past but no records indicate how they fared. The fact that they exist in our coldhouse now might indicate that they were not too well adapted. However, we intend to move some of our stock of these two species out this spring to make personal observations.

Since *L. radiata* has been proved to be thoroughly adapted to our conditions and deserves wider use, it is discussed first. This species is found in many gardens in the deep South where it has been grown under the binomial, *Nerine sarniensis*, a name properly belonging to a South African bulbous plant that can be grown here only in the greenhouse. This error was first brought to light by Mr. Wyndham Hayward in an article that appeared in the National Horticultural Magazine, Vol. 16, April, 1937. With us, *L. radiata* flowers in mid-September, at which time its brilliant scarlet flowers, with long "spidery" stamens (it is sometimes called the Spider Lily), are borne on stalks 12-15" tall. By October, these are replaced by the new foliage that grows throughout the winter. It is certainly unusual for a bulbous plant

to produce its foliage during the normally dormant seasons of autumn and winter only to die down in April, at the approach of our usual growing period. Soon after the foliage has withered, the bulbs can be dug. A rest period is not necessary and the bulbs can be replanted immediately. I have dug *L. radiata* as deep as 8" below the surface and they generally can be planted at that depth. Until the flower spears appear in early September, there is no indication of the existence of the plants though it is difficult to understand how they contrive to remain dormant during the hot summer. In view of the success with this species at this station, it is well worth the consideration of gardeners farther north, especially since it can be grown under sod. The bulbs thrive under such a covering and the grass mulch will provide added protection during severe temperatures.

In addition to the typical *L. radiata*, there is a white form, *alba*, with which we are familiar and there is said to be a variety, *variegata*, which has floral segments that turn white with age. We have noted this condition to a considerable extent in our plantings and it would hardly seem that such a separation is worth while. It has been reported that *L. radiata* does not set seed and this is true of most of our plantings. B. Y. Morrison, however, has a clonal group of bulbs that regularly produce seed. It might also be noted that the Japanese have reported the bulbs as edible but our crop has not been large enough to justify sampling such a handsome ornamental bulb. One should be cautious since many members of the Amaryllis family possess poisonous principles.

Lycoris squamigera has been grown in Massachusetts since its introduction before 1900. Dr. Hall is said to have

grown it in his Shanghai garden as early as 1860 and for a time, the species bore his name, *L. halli*. Each August, the local papers usually carry letters from readers regarding the "Ghost Lily" or "Resurrection Lily" and the mysterious appearance of the flower stalks through the baked summer clay. For, as with *L. radiata*, there is a periodicity of flower and foliage development and the presence of flower stalks with no signs of foliage is quite remarkable to the novice. The stalks will grow to 24 inches and bear clusters of fragrant flowers of Magnolia Purple (HCC-030/3). With age, the flowers appear bluish. The foliage does not follow the flowering immediately as with *L. radiata* but appears in the spring, forming large clumps of broad, strap-like blades that die down by June. This is, by far, the most vigorous of the species, both in foliage and flower. As with the other species, *L. squamigera* does not set seed with any regularity.

Lycoris aurea is the least known of these species in our gardens. Even in recent literature there is confusion as to the time of flowering and the color of the flowers. In our plantings, *L. aurea* flowers in early August, coinciding with *L. squamigera*. Like that species, the foliage appears in the spring, disappearing in May. The flowers are more like those of *L. radiata* in that the segments are narrow and wavy and the stalks are about as tall as those of that species. The flowers are Saffron Yellow (HCC-7) and in clusters of four or five. The corolla segments fan out in a divergent manner, balanced by the cluster of six stamens. In general, this is the least vigorous of the three species discussed here.

Since the setting of seed is rather uncommon, no hybrids have yet been



J. L. Creech

Lycoris squamigera

brought to the attention of the writer. In 1950, the seed-producing clone of *L. radiata* growing in Mr. Morrison's garden was pollinated by *L. aurea* and the seed gathered and sown in a sandy soil in October. By spring, the round, black seeds had germinated. Later, when one might expect to see foliage, only the empty seedcoats were found and it appeared that the effort

was a failure. Careful examination of the seedflat revealed tiny elongate bulb-lets at the very bottom of the flat. These were transplanted and the first foliage was noted in October of 1951. It will be several years before the seedlings flower but a cytological examination of their roottips by Mr. Don Wetherell, Department of Botany, University of Maryland, has shown them to have 19

*J. L. Creech**Lycoris aurea*

chromosomes. Since *L. radiata* is a triploid with 33 chromosomes and *L. aurea* is reported with 12, 13 and 14,

we are watching the progress of the seedlings with increased interest.

A few general observations should

*R. L. Taylor**Lycoris radiata alba*

be made. The bulbs of all the species discussed require several years to develop into bold, dense clumps and should not be transplanted until they have attained such a display. Equally adapted to sun or shade, they naturalize well in heavy sod or in open beds at the foundations of buildings. Once planted, they require no particular care

for they produce their foliage at times of optimum moisture in the soil. If one grows *L. radiata* in open ground farther to the north, it would be well to mulch the leaves during open winter months. Since the foliage has died down by the time regular grass cutting occurs, one need be careful only at the time the flowers are pushing up through



Claude Hope

Lycoris albiflora

the grass. As for locating them in the garden, *L. squamigera* would serve best as a foundation plant because of its size while *L. radiata* and *L. aurea* would be better used in sod areas and shady ravines. Since they all flower

at a time when the more common bulbs have gone past, their presence in the garden will be a source of "autumn" interest. In addition, they make handsome cut flowers, lasting for several days. It is undoubtedly true that

where we are attempting a month-by-month garden, *Lycoris* will find a permanent place once its members have become more widely known.

U. S. Plant Introduction Garden
Glenn Dale, Maryland

Anapodophyllum -- The Wild Duck's Foot Leaf

MARJORIE F. WARNER

At first glance the "Remarques nécessaires pour la culture des fleurs" (Paris, 1658), of Pierre Morin "le juene, dit Troisième," seems mainly devoted to the "florists' flowers" of that period. It has long catalogs of named varieties of the tulip, *Iris*, *Anemone*, and *Ranunculus*; but also, in its cultural lists grouped according to season, soil, and climate, it gives a great many humble, modest flowers of the day as well as more showy ones. These lists, moreover, include many recently introduced species.

One of the arresting names is *Anapodophyllum*, listed by Morin among plants loving a moist rich soil and also among those flowering in May. This name was adopted by others, and *Anapodophyllum Canadense* Morini appears as a synonym in the "Hortus regius" (Parisiis, 1665), of Denis Jonquet. The genus was established by Tournefort in his "Elémens de botanique" (1694, v. 1, pp. 204-205), with one species, *Anapodophyllum Canadense*. Tournefort says that Monsieur Morin, the florist, was author of the name *Anapodophyllum*, and gives its derivation from Greek words meaning *wild duck's foot leaf*.

The strange plant proved to be the familiar May-apple, *Podophyllum peltatum*. In his "Hortus Cliffortianus" (1737, p. 202), Linnaeus reduced the

earlier name to *Podophyllum*, remarking that "*Anapodophyllum* is a sesquipedalian name; therefore I have cut off three letters; nevertheless the remainder are sufficient to express the same meaning." Herein he shows either botanical or linguistic ignorance, as the May-apple leaf does not resemble any kind of a foot but the leathery one of some web-footed bird. *Anapodophyllum* was sesquipedalian, but *Podophyllum* is senseless. It has no application to the May-apple. "Gray's Manual of Botany" (8th ed. by Fernald, 1950, p. 673), gives its derivation from the Greek words for *foot* and *leaf*, "probably referring to the stout petioles," which is as good an explanation as can be made without going back to Tournefort's derivation.

The Linnean specific, *peltatum*, however, admirably describes the gallant way in which the flower and fruit are shielded by the big leaves. The French vernacular (though not "common") "Podophylle en bouclier" is merely translated from the Latin. The usual English "May-apple" is inappropriate but is easily explained, as it was given at a time when any roundish fleshy fruit was termed an "apple." *Podophyllum peltatum* has received many vernacular names, but is best known among English speaking people as May-apple, and its French equivalent,

"pomme de mai," is used both in France and in French Canada.

Its introduction to Europe is open to conjecture. According to Aiton, "Hortus Kewensis" (1789, v. 3, p. 222), *Podophyllum peltatum* was cultivated in England in 1664. The authority is Evelyn's "Kalendarium hortense" (1664, p. 67) which gives *Anapodophyllum* among the flowers "in prime or yet lasting" in the month of May. It should have been grown in England several years to justify this listing, and as Evelyn's "Diary" tells of his visits to "Mr. Morine" in Paris, on April 1, 1644 and May 23, 1651, he may have obtained the plant from Pierre Morin himself on one of these occasions.

There is no evidence of its continuous cultivation, though it could have remained unnoticed in gardens. Ray, in his "Historia plantarum" (1686, v. 1, p. 671), says it had been sent from London under the name Pomum Maiale to "our little garden of Cambridge," where it had been growing for some years. He thought it a native of North America, but did not know its history. But it certainly was known, if not established, in England some fifty years earlier. In his "Early British botanists and their gardens" (1922, pp. 369-371), R. T. Gunther prints a list of Parkinson's desiderata, including "The Maye Apple or seedes"; also one of seeds he received from "Virginia," March 16, 1636, in which No. 11 is "Maye Apple seede a blackish browne seede less than Stramonium, the flower white & the fruit much eaten by them." It is likely there were direct importations of this plant to England before 1664 from "Virginia," where it must have been plentiful in many localities.

But years before it was known in

Europe, *Podophyllum peltatum* had been found in the New World and described by Samuel de Champlain (Œuvres de Champlain publiées sous le patronage de l'Université Laval par l'abbé C.-H. Laverdière, 2. éd., 1870, v. 4, pp. 30-31). In August, 1615, he was exploring the country on the Hurons, near their great village of Cahiaugué, in southern Ontario, where he found:

A kind of fruit which is of the form and color of small lemons and has something of their flavor, but the inside is very good, almost like that of figs. The plant that bears them has a height of two and a half feet; each plant has only two or three leaves at most, of the shape of those of the fig, and bears only two apples on each stalk. There are quantities of them in many places, and their fruit is very good and of good flavor.

Some of Champlain's references to plants and animals are obscure, but this is an unmistakable picture of the May-apple. When two or more plants grow close together, they may look like a single plant with several leaves, instead of the bifurcated leaf with a single fruit growing from its crotch. The resemblance of the fruit to a small lemon has often been noted, and accounts for the vernacular name, "citronnier," which is occasionally found in Canada, and the English "wild lemon" in some localities.

Morin's *Anapodophyllum* was unquestionably from Canada, and one might suppose the plant had come from Champlain's explorations, but it cannot be traced. Champlain was interested in the food and other useful plants of New France, and a few of them were experimentally grown at Paris, but there is no evidence that the May-apple was tried out in the

food garden, though it might have escaped notice because of indifferent results. Probably it never grew so luxuriantly or fruited so abundantly in France as in some parts of the United States. And in England, it was remarked by Morison in his "Plantarum historia" (1699, v. 3, p. 533), that "it flowers in April and ripens its fruit (which rarely occurs) in May, whence it is by some called the May apple."

I question whether it was ever grown for food either in England or in France. As a "wild food," its fruit was eaten by aborigines, and by travelers and others in circumstances of scarcity, but I beg to differ with Champlain in regard to its flavor, which is generally considered insipid and by some, even disagreeable. This prevented its becoming a popular delicacy, and it is unimportant in the history of esculents.

Medical botany, which furnishes many clues to the history of plants, is not very helpful on *Podophyllum*. One of the earliest references to its active properties is Catesby's "Natural History of Carolina" (1731, v. 1, p. 24), which says the root is an excellent emetic, whence it is called "ipecacuanha" by the natives, probably meaning the colonists, as this name had been applied to several other plants besides the Brazilian *Ipecacuanha*, and could not have originated with the Indians. Although its medicinal and toxicological qualities are well known among many North American tribes, its ethnobotanical lore throws no light on its introduction in Europe.

It was as a garden flower, and probably because of its hardness, that the May-apple found favor with plant lovers. It was already established in the flower garden in Paris in 1658, and continued to be popular until well along in the nineteenth century. Mor-

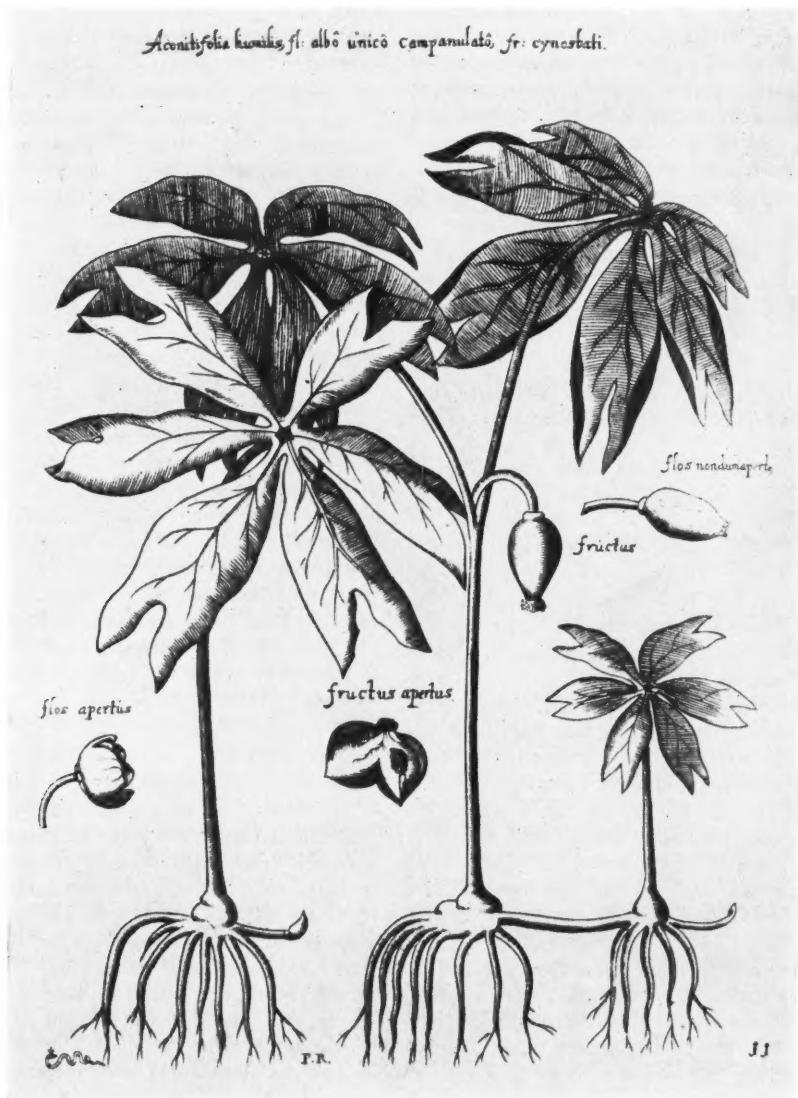
dant de Launay, in the "Bon Jardinier" for 1813, said this beautiful plant was a native of North America, and was hardy throughout the winter in France. It was listed in Vilmorin's "Fleurs de pleine terre" as late as 1909, but its vogue had begun to decline, and I have not found it in more recent works of similar scope.

Mordant de Launay says it is in the list of plants grown by Fagon in his time at the Jardin du Roi. This probably refers to the "Ranunculi facie planta peregrina, *Anapodophyllum Canadense* Morini," in the "Hortus regius pars prior" (Parisiis, 1665, p. 153), prepared under the direction of Denis Jonquet and often credited to him. But it is understood that it was chiefly compiled by Guy Crescent Fagon (1638-1718), a competent botanist who was long connected with the Faculté de Médecine of Paris, and from about 1695 to 1715 director of the Jardin du Roi, later called the Jardin des Plantes. The polynomial, "Ranunculi facie planta peregrina, *Anapodophyllum hort. Morini*," first appeared in Jonquet's "Hortus, sive Index onomasticus plantarum quas excolebat Parisiis anni 1658, & 1659" (Parisiis, 1659, p. 108), and the name *Anapodophyllum* was undoubtedly, and specimens of the plant probably, communicated to Jonquet by Pierre Morin himself. It may have been in the royal garden continuously from the time of Jonquet and Morin down to that of Fagon and Tournefort.

By the end of the seventeenth century *Podophyllum peltatum* was found in a number of places, not only in London and Cambridge, but also in the botanical gardens of Leiden, Hamburg and Berlin. Its lush Pre-linnean names, variously associating it with *Ranunculus*, *Dentaria*, *Solanum*, *Nymphaea*, and other familiar genera, do not offer



Plate by Nicolas Robert in the "Recueil des plantes gravées par ordre du roi Louis XIV," in the Bibliothèque Nationale, Paris. This collection of plates is not dated, but Robert's drawing was made from a plant in the Jardin de Blois, or Hortus Blesensis, probably between 1650 and 1660.



From Christian Mentzel's "*Pinax . . . Index nominum plantarum universalis*"
(Berolini, 1682, plate xi)

any clues to the routes of its distribution, but they do indicate that it was not received from Paris, where the name *Anapodophyllon* seems to have been established, while it was not adopted outside of France, though sometime quoted as a synonym.

I would like to know how and when the May-apple got into the royal garden of Blois. Although it was known there as *Anapodophyllon*, it was not associated with Morin. The Château de Blois was the seat of the Orléans family, and sometimes a royal residence, but I have been unable to find anything about the establishment of its garden. Marie de Medici, mother of Louis XIII, lived there from 1616 to 1630, but the garden only became prominent in the latter years of her son Gaston, duc d'Orléans (1608-1660). He employed various botanists at Blois, among them Robert Morison, who was physician to the duke and keeper of the garden from 1650 to 1660, and who zealously built up the collection of plants. After he returned to England he published his "Hortus regius Blesensis auctus" (1669), containing a catalog of all the plants in the Jardin de Blois in his time, and also descriptions of many new or critical species. During the same period the artist, Nicolas Robert (1600?-1684), was employed by the duke to paint miniatures of the flowers on vellum, and these later served as basis for drawings that were checked by botanists of the Académie des Sciences at Paris, engraved, and published as the "Recueil des plantes gravées par ordre du roi Louis XIV, par Abraham Bosse, Nicolas Robert, et Louis Châtillon," in three folio volumes, without date, but completed in 1692. So we know that *Anapodophyllon* was at the Jardin de Blois in the decade 1650-

1660, but the records do not show how early it came there, or the source from which it was received.

It is evident, however, that it came to the royal garden under the name *Anapodophyllon*. Robert's plate was listed in Seguiet's "Bibliotheca botanica" (1740, p. 161), as "*Anonyma. Anapodophyllon quibusdam*," that is, a nameless plant, by some called *Anapodophyllon*, but in the "Recueil des plantes" it is inscribed "*Anapodaphyllon* [sic] *Canadense* Morini," which was the revised name supplied at Paris. Morison first listed it in his "Hortus regius Blesensis" (1669, p. 66), as "*Dentaria monophyllos, Anapodophyllon, quibusdam*," but in his description of the species (pp. 258-259), he changed the latter phrase to read: "*Anapodaphyllon* [sic] *Parisiensis*: Nominabatur," possibly having learned meanwhile that the strange name used for this plant was accepted in Paris. He later renamed and redescribed it as a "Solano congener" in his "Plantarum historia" (1699, v. 3, p. 533), but did not even cite his earlier name.

The botanists at Blois evidently regarded *Anapodophyllon* as a popular or vernacular name. What would a respectable plant have been doing, anyway, in those days of lengthy polynomials, with only a single name, even if it had fourteen letters? It was simply nameless. And in view of the fact that *Anapodophyllon* was the only name known for it at the Jardin de Blois, it is possible that it had been received there before Morison's time, so that its source had been forgotten, and that it had been distributed for a number of years before Morin published the name in his "Remarques nécessaires pour la culture des fleurs" in 1658.

The name *Anapodophyllon* is a chal-

lenge to both speculation and research. Among primitive peoples the peculiar leaf of the May-apple has sometimes given rise to local names like "duck's foot" and "wild duck's foot," as in some sections of the United States, but such usages do not account for Morin's name. It certainly did not come from England, where, except for Evelyn's use in 1664, *Anapodophyllum* only occurs as a botanical synonym; and it is unlikely that a French gardener or botanist would have invented the Greek term without the stimulus of a vernacular equivalent. This must have come direct to France with the plant itself from the region where it was collected, either as an Indian name meaning "duck's foot leaf," or more likely in an intermediate French form such as "pied de canard." This theory is supported by Tournefort's derivation of *Anapodophyllum* in his "Elémens de botanique" (1694, v. 1, p. 205), from "*Anas, canard, oye sauvage*," and the Greek words for foot and leaf; that is to say, a plant the leaf of which resembles the foot of the wild duck. Tournefort's word "oye," often used for the goose, nevertheless applies to the whole duck tribe, and I believe his emphasis on "sauvage" or "wild" derived from a tradition of an aboriginal name. We have seen that the May-apple was in the royal garden in the time of Joncquet, who undoubtedly had it from Morin himself, and some note of the origin of the plant may have been preserved either in connection with the garden cultures or herbarium material available to Tournefort.

A long search in literature and inquiry among authorities on ethnobotany have failed to discover any old vernacular equivalent of "duck's foot leaf" in Canada, where, if "pied de canard" is sometimes found, it is likely to have

come from France. It is to be remembered that *Podophyllum peltatum* is not a characteristic Canadian plant, but is found in rather limited localities, and the original specimens may have come from a region whence the plant and its indigenous name have long since disappeared. This could have been the case with the Huron country where it was found by Champlain in 1615, because both the Huron tribe and its language afterwards became practically extinct. I should very much dislike to have it stated on my authority that the May-apple was brought into France by Champlain. It is an engaging theory, which I have long and vainly tried to prove. But the supposition of an aboriginal name meaning "duck's foot leaf" cannot be confirmed; if such a name was used among the Hurons in Champlain's time; too little is now known of their language to retrieve it. The origin of the name *Anapodophyllum* is still to be found by some ethnobotanist or linguist.

All we really know is that Samuel de Champlain was the first European to see and describe this plant in Canada, and that it was long afterwards found in France as a Canadian plant, while it was probably introduced in England from the settlements of "Virginia." The present writer believes it was established and considerably distributed in France under the name *Anapodophyllum* before this was published by Morin in 1658, and in spite of Tournefort's statement and Joncquet's attribution, the name may not have originated with Pierre Morin, but with some earlier botanist.

Podophyllum peltatum has been often and beautifully pictured, and one of the finest plates is that of Christian Mentzel, in his "Pinax . . . Index nominum plantarum universalis" (Bero-

lini, 1682, pl. xi), under the name, "*Aconitifolia humilis*, flore albo unico campanulato, fructu Cynosbati." This shows the way in which the plant pushes its way forward with its creeping rootstocks, but no picture and perhaps no garden specimen can quite convey the challenge of a gallant troop of May-apples, advancing under their

umbrellas from the margin of the woods into open pastures or adjoining fields. This aggressive behavior is not endearing to the farmer, but the sturdiness and audacity that make this plant conspicuous throughout much of its wide distribution, as well as the decorative quality of its leaves, may well have made it popular in French gardens.

Daylily Variety Trials in Puerto Rico

HAROLD F. WINTERS

Practically every dwelling, large or small, in rural Puerto Rico has a front yard or patio flower garden and there are a fair number of "aficionados" who cultivate some special flower such as the orchid, begonia, hibiscus, rose, or amaryllis. Many of the flower varieties now cultivated here come from temperate climates, but may have originated in the Tropics. Most gardens are planted informally with as many varieties as possible mixed in the small plots.

The climate of the islands varies from the tropical marine climate of the north, east, and west coasts to the arid south coast. A central cordillera which reaches to 4,400 feet elevation runs the length of the island east and west. Here the air is always cool and moisture abundant throughout most of the year. Although frost has never been reported, temperatures in the mountains sometimes drop to the lower 40's during the dry season, January to May. For Aibonito, at 2,000 feet elevation, the mean annual temperature is 71° F. The mean annual temperature for Mayaguez is 77° F., and about 5° variation between summer and winter. The

flower varieties which can be grown in these different climates vary considerably.

The Tawny Daylily, *Hemerocallis fulva* Linn., is seen occasionally in gardens at all elevations but apparently does best above 1,000 feet elevation. Until the trials reported here were started the author had never seen the hybrid varieties in Puerto Rico which have become so popular with gardeners in the continental United States. All of the plants used in these trials were supplied by Miss Eleanor Hill of Tulsa, Oklahoma.

In August 1946, the following daylily varieties were received and planted in heavy clay soil at Mayaguez, which is near sea level: Aladdin, August Pioneer, Boutonniere, Brown-eyed Susan, Brunette, Burning Star, Chengtu, Chisca, Fulva Rosea, Linda, Matador, Minnie, Mrs. W. H. Wyman, Sweetbriar, Theron, Triumph, Wau-bun, and Zouave. The location was well drained, sheltered by trees and shrubs from strong winds, but sunny until mid-afternoon. The plants were strong divisions or offshoots which were mature when dug for shipment. All of the varieties survived the trip and produced new leaf growth; two varieties

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Juarez variety of daylily blooming during February. After becoming established some varieties bloomed almost every month during the year.

bloomed soon after they were planted, Aladdin in September and Theron in October 1946. Subsequently this plant of Aladdin died. The plant of Theron survived but has not bloomed again. Most of the varieties retained their foliage during the 1946-47 dry season, probably because they had passed through an enforced dormancy when dried for shipment, although in some varieties foliage was weak. None of the plants flowered during 1947 nor during 1948 up until June when the survivors were dug for transplanting to the mountain area. Several varieties went completely dormant during the winter dry season of 1947-48, and Aladdin, Brunette, Fulva Rosea, Minnie, and Zouave died. All surviving plants were considerably weaker than when received.

In June 1948 the 13 varieties remain-

ing in the initial planting at Mayaguez were moved to a location with loamy clay soil in the mountains at 3,000 feet elevation. Included in the same planting were 49 additional varieties and replacements. These plants had been potted in No. 10 tin cans and held at Mayaguez for several weeks while the new site was prepared in the mountains.

One plant each of five varieties was added to the new planting in November 1949, making a total of 67 varieties which were tested at this location as follows:

Planted June 1948

Aladdin—6,¹ M²

¹Flowering rated by number of stalks produced in May and June 1949.

²Foliage rated as weak, medium, or vigorous.

Araby—7, M
 August Pioneer—W
 Baronet—14, V
 B. H. Farr—3, V
 Bijou—1, M
 Black Cherry—1, M
 Black Falcon—M
 Boutonniere—W
 Brown-eyed Susan—32, M
 Burning Star—W
 Caballero—3, V
 Chengtu—M
 Chisca—8, M
 Criterion—8, V
 Dawn Play—1, M
 Doeskin—M
 Dolly Varden—1, W
 Dominion—W
 Duchess of Windsor—3, M
 Emberglow—3, M
 Geronimo—8, M
 Gypsy—2, V
 Honey Redhead—W
 Iris Perry—1, W
 Jean—1, M
 Juarez—12, V
 Kwanso Virginica—1, M
 Linda—2, M
 Lustrous—2, W
 Matador—M
 Mignon—W
 Mikado—12, M
 Minor—W
 Morocco Red—M
 Mrs. Hugh Johnson—W
 Mrs. J. J. Tigert—W
 Mrs. W. H. Wyman—5, M
 Multiflora Summer Hybrids—W
 Nebraska—M
 Ophir—W
 Persian Princess—W
 Pink Charm—2, V
 Porcelain Pink—1, M
 Port—2, W
 Rajah—M
 Redbird—M
 Royalty—2, W
 Sachem—2, M

Seedling No. 18 (Hill)—1, M
 Stalwart—M
 Starlight—3, V
 Sweetbriar—1, M
 Theron—W
 The Sultan—1, M
 Triumph—8, M
 Unidentified yellow (Farr)—10, V
 Victory Taierchwang—V
 Wau-bun—6, M
 Wekiwa—3, M
 Wolof—1, V
 Zouave—1, M

Planted Nov. 1949

Blackburnian
 Firefly
 Firethorn
 Minnie
 Potentate

Growth response was immediate and the vigor of the plants at the new location in the mountains was striking. Flowering was sparse for the first 10 months. Varieties which bloomed during this time were: Aladdin, Baronet, Brown-eyed Susan, Dolly Varden, Dominion, Emberglow, Lustrous, Mikado, Mrs. Hugh Johnson, Pink Charm, Starlight, Unidentified yellow (Farr), Wau-bun, and Zouave.

By May and June 1949, flowering was general and the test plot was a riot of color. The number of flower scapes per clump at that time was counted as a measure of profusion of bloom. This number is given after the variety names in the preceding list of varieties planted. An indication of foliage vigor is also given by the letters (V) vigorous, (M) medium, and (W) weak following the variety name. A few varieties which were not in bloom at the time the above count was made may be of value because of persistent flowering. This everblooming tendency is much more pronounced here than in



Some daylily varieties produce aerial plantlets from axillary buds on the flower scape. Note the roots on the plantlet at the right which has been prepared for planting directly in the ground.

the States and some varieties were found in flower almost every month in the year. These varieties are usually the ones which show medium to vigorous foliage growth and no tendency to go dormant. The greatest show of bloom comes from May to July as in the continental United States. A clump of the variety Juarez flowering during the month of February is shown on Page 181. In general, flower color is not so intense as in the same variety grown in Oklahoma. This may be due to lack of sunlight. Summer days are shorter here and cloudy weather more common.

The varieties which have performed best and which can be recommended for planting at elevations above 1,000 feet in Puerto Rico are as follows:

Aladdin	Mikado
Araby	Mrs. W. H. Wyman
Baronet	man
B. H. Farr	Pink Charm
Brown-eyed	Porcelain Pink
Susan	Redbird
Caballero	Sachem
Chisca	Starlight
Criterion	The Sultan
Duchess of Windsor	Triumph
Emberglow	Unidentified yellow (Farr)
Geronimo	Wau-bun
Gypsy	Wekiwa
Juarez	Wolof
Linda	Zouave

Some of them might perform satisfactorily at lower elevations if planted in a well-drained, moist, shaded location. In selecting these varieties consideration was given to profusion and persistence of bloom, vigor of the plant, and to whether or not foliage remains evergreen. Personal preference was not a consideration and no attempt will be made to describe the flowers.

Several varieties were particularly

unsatisfactory. These either failed to flower or flowered only once during the 2-year period:

August Pioneer	Morocco Red
Black Falcon	Mrs. J. J. Tigert
Burning Star	Multiflora Summer Hybrids
Chengtu	Ophir
Dominion	Persian Princess
Honey Redhead	Rajah
Iris Perry	Theron
Mignon	
Minor	

The varieties which became entirely dormant during the short dry seasons which occur from February to May at this elevation were: August Pioneer, Dolly Varden, Firefly, Honey Redhead, Iris Perry, Jean, Lustrous, Mignon, Minor, Multiflora Summer Hybrids, Persian Princess, Royalty, Seedling No. 18, and Theron. Most of these varieties do not break dormancy easily but after a good rain may send up naked flower scapes and bloom before any new foliage is produced. This has been observed in the varieties Dolly Varden, Lustrous, and Royalty. Some of the others produce flower scapes simultaneously with the new foliage. None of these varieties is considered suitable for planting in Puerto Rico. They have been generally shy bloomers and leave the ground bare for several months at a time when dormant. This is an important consideration in Puerto Rico where gardening is a year-around activity.

A type of vegetative apomixis was noticed in some of the plants. This tendency to produce aerial plantlets upon the flower stems was especially pronounced in the following varieties:

Black Cherry	Firethorn
Chengtu	Juarez
Criterion	Linda
Duchess of Windsor	Morocco Red
	Redbird

Sweetbriar

Wolof

The plantlets develop rapidly in the axils of leafy bracts on the lower part of the stalk. They usually have roots and are ready to plant by the time the last flower fades. Plantlets taken from

the varieties Criterion, Juarez, Linda, Redbird, and Wolof in July and August 1949 and planted directly in the ground produced good-sized clumps which bloomed in July 1950. Some varieties also were prolific seed producers with insect pollination.

Rhododendron Notes

CLEMENT G. BOWERS, *Editor*

Rhododendron alabamense Rehder

This azalea is figured because it is one of the lesser known native deciduous species. The natural distribution is rather limited, for according to Rehder, it is found only in the state from which it takes its name, and certainly there has been little opportunity for it to appear in cultivation.

From the collection of plants of *Rhododendron alabamense* growing at the U. S. Plant Introduction Garden, Glenn Dale, Maryland, the clone chosen for the accompanying illustration has compact heads of thirty or more highly fragrant, white flowers, reminding one of *Viburnum carlesi*. Other plants in the group have fewer flowers, more in keeping with the prescribed number and some of the flowers are tinged with pink. All, however, have a distinct yellow blotch on the upper middle petal and flower in mid-May here.

This particular series of plants (P. I. No. 196535) was collected near Bessemer, Alabama, by C. O. Erlanson for testing by the U. S. Department of

Agriculture. They were selected in the wild for outstanding habit and fragrance. Since their arrival in 1936, the plants have developed steadily into dense clumps between three and five feet tall, thus exceeding the height in the wild. Completely hardy in the Washington, D. C., area, their development and floriferous habit suggest trial farther to the north and wider cultivation. Additional comments on the culture elsewhere would be of interest and value.

JOHN L. CREECH

Every year a watch is kept for the opportunity of seeing new species of azalea. Last autumn there appeared a few flowers, and this spring a goodly number on plants raised from seed of what was supposed to be *Rhododendron rufohirtum*. On flowering, the plants proved to be *R. microphyton*. For the rest of gardeners let it be recorded here and now, only that the plants are straggling as yet, with small foliage, and small lavender-tinted pink flowers that make slight show as yet.



J. L. Creech

[See Page 185]

Rhododendron alabamense

A Book Or Two

ALL ABOUT AFRICAN VIOLETS. Montague Free. The American Garden Guild and Doubleday and Company, Inc., New York, 1951. 304 pages, illustrated in black and white. \$3.50.

Even if you think that you already know all there is to be known about African Violets, or if you have reached the place where even the thought of an African Violet makes you ill, you should still rush right off and buy this book. The text is a model for all writers on any family group of plants and the author's program and presentation include about everything that any one could imagine. The illustrations are so excellent that they could almost stand alone without text, so if you are not a reader this book is still the book for you though, of course, some one else will have to tell you about it. The color pictures, some from color photographs and some from Maude H. Purdy's excellent water color paintings, should lead to your further downfall.

The only part of the book that interested this reviewer was the section devoted to Species, pp. 223 to 231, brief enough and not too persuasive. One could have hoped that the offered species would have diverted some attention from the guinea-pigging originals, with all their minutiae and variable charms. Probably not, since undoubtedly the essential charm of the plant for most gardeners is its unlimited capacity to yield to every conceivable method of propagation. When will one have the courage to name one in honor of Margaret Sanger?

FLOWERING TREES OF THE CARIBBEAN. Painted by Bernard and Harriet Pertchik. Rinehart and Company, Inc., New York, 1951. 125 pages, with 29 plates and one extra. \$10.00.

Garden minded northerners have long wished they could identify many of the flowering plants that they see in Florida and the Caribbean without having to visit herbaria and such. This book will not give all the answers but it certainly is a magnificent beginning.

According to the introduction written by William C. White, the book was born from a desire to know the names of the flowering trees he saw during his assignment in the late war; it was carried out by the financing given through the Alcoa Steamship Company, guided and helped by the entire staff of The New York Botanical Garden, and painted on assignment by Bernard and Harriet Pertchik who never before had had such a task. One is grateful to each person in the whole undertaking.

The plants illustrated are, all of them, highly pictorial and paintable. One regrets only the inclusion of the Chinaberry that is only too well known in the warmer parts of this country where it is not esteemed in spite of what is said of it in the text. The portrait of *Gliricidia* is flattering from what the reviewer has seen of it, and it is not too wonderful a plant, though common enough and one wishes that some other species of *Bauhinia* could have been shown as *Bauhinia variegata* is too well known in the warmer parts of this country to need a plate. Such

expressions, however, must not go further; they are not meant in a carping spirit, only with the wish that other rarer things had been shown.

Most of the trees are known to the reviewer. He delights in the beauty of the paintings and the splendid manner of reproduction. Only one thing needs further observation to make the artists even better than now, namely a more careful study of the growth of stems and shoots. As presented they are too rubbery, too plastic in appearance.

ELEMENTS OF PLANT PROTECTION.

Louis L. Pyenson, Entomologist and Plant Pathologist, Long Island Agricultural and Technical Institute. John Wiley and Sons, Inc., New York, 1951. 548 pages. \$4.96. Line drawings by Emily B. Steffens. 226 illustrations.

The title of this book is somewhat misleading. The author does not discuss all types of plant protection, he is only concerned with the principles behind protection from insects, disease producing organisms, animals, birds

and weeds. There is no discussion here of plant protection against climatic factors.

This book is up-to-date in its presentation on the chemicals available for the control of insects, diseases and weeds. However, the author still adheres to the old classification of stomach, contact and fumigant insecticides, a classification outmoded by the new synthetic organics: DDT, BHC, TEPP and Parathion.

The illustrations are well chosen. The diagrammatic representation of life cycles of insects and disease producing organisms is helpful in understanding and emphasizing this information which is basic to all control work.

If one is looking for specific information regarding the control of insects, diseases and weeds, this is not the book to consult. The usefulness of this book lies in its lucid and well illustrated explanations of the fundamentals which are basic to an intelligent program of pest control on plants.

FRANCIS DE VOS

The Gardener's Pocketbook

Philodendron selloum C. Koch

The plant illustrated on Page 189 was photographed by Mr. David Barry as it grew in front of a real estate office in West Los Angeles in a full southern exposure. *Philodendron selloum* has been grown for a long time in California under the name of *P. bipinnatifidum*, however, all specimens which have flowered have characters which indicate that it should be referred to as the former. It has been reported that *P. bipinnatifidum* is exceedingly

rare in the United States and not grown in California at the present time. (See article and illustration on plants grown in Florida, National Horticultural Magazine, January, 1949. Ed.)

There is a slight bronzing of the foliage with exposure to full sun. This *Philodendron* has hitherto been very rare since it had to be propagated vegetatively. In the last two years about three nurseries have been able to set seed. The secret seems to be to have a number of specimens so that the



Stan Robinson

Philodendron selloum

flowers will bloom simultaneously. It is not ordinarily possible to self-pollinate from a single flower since the pistils are not receptive at the time the pollen is shed. There are now many thousands of plants of this species in the nurseries, but they still command a quite high price.

This species is remarkable for its ability to grow outdoors and to withstand temperatures in the low twenties. It has been quite satisfactory in recent cold winters in most of the Los Angeles area. The plant is very satisfactory for house or interior decoration in its younger stages, but left outdoors will attain a great size, climbing to fifteen feet and forming many aerial roots. The plant will grow under rather adverse soil conditions. It contributes greatly to the tropical effect so much desired in connection with landscaping of modern architecture.

V. T. STOUTEMYER

Los Angeles, California

Abeliophyllum distichum Nakai

The Korean Abelia-leaf, *Abeliophyllum distichum*, is as yet a very rare

shrub in North America and is unfortunately not listed by any American nurseries this year, although several are working up stock of it. This Korean shrub was first introduced into America by the Arnold Arboretum from Japan in 1924. Plants grown from that original importation of seed are still growing well. It is a rather open shrub, about five feet tall, of particular interest because of its dense clusters of pure white flowers in mid-April (in New England). (See notes and illustration, National Horticultural Magazine, January, 1950. Ed.)

The branches arch in a slender fashion and the flowers are especially conspicuous because they appear so early in the spring before the leaves. It is closely related to the *Forsythia*—the flowers being small and more numerous.

During very cold winters, the flower buds are killed on the plants in the Arnold Arboretum but when the winters are not severe, the flowers open at about the same time as those of *Forsythia* and make a splendid combination. Further south where extreme low

temperatures do not occur so often, this plant might be a desirable addition to any planting list. Many of the early flowering shrubs have yellow flowers, as for instance: *Forsythia*, *Cornus mas*, *Corylopsis* species, *Dirca palustris*, and *Lindera benzoin*, but this species with its white flowers makes quite an interesting addition to the group.

A slight tendency towards very light pink flowers has been noticed on one or two of the plants and it is hoped to get, through selection, a clone that will have flowers of this color.

DONALD WYMAN

Jamaica Plain, Massachusetts

CORRECTION

In the July 1951 issue of the National Horticultural Magazine on page 141, there appears an illustration entitled *Arctostaphylos glauca*. Shortly after the appearance of this issue Dr. P. A. Munz drew my attention to the fact that this illustration was not of the species described. However, he was uncertain which species I had had photographed for this paper. As the genus is a critical one, detailed examination of material is often necessary to determine species and varieties. After some research into records it was definitely established that the plant from which this picture was taken is *Arctostaphylos insularis* Greene. I regret the error made during my original check into the records and hereby offer my apologies to the Editor and the Readers of the Journal. *Arctostaphylos insularis* is a species localized in the islands off the coast of Southern California (from Santa Barbara southwards), Santa Cruz, Santa Rosa and Catalina. It was published by E. L. Greene in The Bulletin of the California Academy of Sciences, No. 2, page 494,

in 1887, from material collected on Santa Cruz Island.

Arctostaphylos insularis makes a handsome shrub four to seven feet tall and is a sturdy-growing plant, like so many other species of plants coming from these islands, seeming to have a much more robust constitution than some of the species from the mainland. The foliage is a rich, yellow-green, rather than the blue-green of *A. glauca* and the flowers are a creamy white, abundantly borne, often at two or three different times during the year. Whilst a hearty-growing shrub it does not appear to develop the tree-like trunk and proportions of *A. glauca* and is not so statuesque a plant in its old age. In all probability it would be an easier plant to cultivate in more moist climates though it is doubtful if it would be any more tolerant of frost than would *A. glauca*.

EDWARD K. BALLS,

Claremont, California

From A Pennsylvania Garden

Of *Anemone appennina* I have sheets and colonies of both the blue and the white, the blue far preferable. They have seeded for over twenty years and now they spread under a small magnolia and grow large and tall in the leaf mold of the Rhododendron plantings.

Of giant *Scilla campanulata* varieties I have had for many years a very fine tall porcelain blue, called Czar Peter, given by a friend, Mrs. Anson Peckham. It is very different from its fellows, with strong flowering stems, a most unusual plant. This last autumn I planted a few bulbs of the new White City. The bulbs were huge, but next spring will tell the story.

FRANCES EDGE MCILVAINE

Downingtown, Pennsylvania

Other African Violets

Although the Editor was permitted to buy stock a little earlier than last October, he has not yet succeeded in bringing into flower sufficiently well for a portrait, three of the new species that have been recently introduced into cultivation. From the few flowers that have opened as yet, it would appear that they are smaller than those of the familiar *Saintpaulia ionantha* and its progenies. They are rather more blue lavenders than most which will make them a welcome addition. It is hoped that by this autumn they will have grown enough to warrant a picture or two. Meantime notes will be welcome from members who may be growing them, even if they have been well illustrated and shown in Mr. Free's recent and excellent book on The African Violet.

Crocus, Vanguard

This variety has been mentioned by Mr. Bate in other places in the Magazine, but the Editor saw it this last March flowering in Mr. Bate's garden in New Jersey and wishes to record his own enthusiasm for its most unusual form and color. Although the term is far from scientific, to say that the lavenders of the segments are both gray and silvery, is about the best colloquial description that can be given. The buds are definitely slender and pointed, and the flowers seem to stand up under the vicissitudes of spring weather remarkably well.

Narcissus biflorus (Frontispiece)

This very old garden plant that is one of the very last of all narcissus to open in the garden, will not often have an opportunity of appearing on any show table where it would have little chance of competing with the more

modern counterparts that we know as Poetaz narcissus. It has a long history in garden literature and it would seem that it must have been brought to this country by the earliest settlers as it is widely distributed in gardens in the East and well down into the Deep South.

As can be seen from the illustration, its flowers never open quite flat but its slightly off-white perianth and its creamy yellow cup make a nice contrast and its scent makes it a welcome addition to the spring bouquet whether that warrants the name of "arrangement" or not.

The photograph was made from flowers sent in by one of our members whose name escapes my memory and of which I have made no mention on my file print. My apologies are extended. Ed.

Early Magnolias

Possibly because these all came through the spring with no frost damage, they seemed even more wonderful than ever before. The Editor had the opportunity of seeing them in two widely separated locations and in each case he was interested to observe how rarely they were used in general plantings, and how little garden owners seem to have hunted out the variations in color and time of flowering that may be had.

The plants grow remarkably well and, for woody plants, swiftly. Not all come quickly into flowering, but the members of the groups related to *Magnolia denudata* and *M. liliflora* will frequently flower as very small plants. So if one must economize and buy a small plant he need not hesitate with the thought that flowering will be long deferred.

The earliest of the colored varieties

to flower in the Mississippi garden was *Purpurine* which has blooms somewhat suggesting the deep bowl-shaped flowers of *Lennei*. The color is not too distinct from that of others but at the time of its flowering, it has no competitors in the South.

All writers and books seem to be agreed that there is none lovelier than *M. denudata* itself. There is an old plant near the garden in the north, that every year bends down its branches to show off its pure milky white flowers. The new plant in the southern garden had no more than three this first year, but every day we walked to look into the blooms and sniff the very distinctive scent. Some fine day some one must invent as his horticultural contribution, a series of not too difficult words that will pass to identify flower scents. The Magnolias should contribute several.

Magnolia Veitchi was bought in 1951 but this year brought about thirteen flowers through to perfection. Here again, one has a very distinctive flower perfume, one unlike any of the *Magnolia* scents known to the writer. Its flowers were a charming clear pinky white deepest at the base of the sepals, but not too distinct from the same sort of coloring that appears in some of the *Soulangeana* hybrids. The leaves of

the tree, for that is what it is said to become, have a nice tinting of pale bronze over them as they unfold, that disappears slowly until it is no more than a narrow margin, and then is gone.

As yet our plant of Mr. Sawada's new deep rose colored form of *Magnolia stellata* is too small to be expected to flower, but the plants in the nursery near Crichton, are a fine lot. The sepals are rather narrow, but they have a deep magnolia-reddish-purple on the outside and a clear rose-pink tone on the inside of each one. It is not a variety to displace any other but it is one that should be added to a group planting of the paler colors to make them seem even clearer and more delicate than they are.

Now that propagation of all these Oriental Magnolias is becoming more and more abundant, it would be a splendid idea if some group, whether garden club or otherwise would undertake a highway planting, to add wonder to it all. They would come well before dogwoods and in the South where Japanese cherries are difficult or refuse entirely they would make the earliest display from small trees. If cleverly combined, there, with selected forms of crape myrtle, they would assure two great flowerings each year.

